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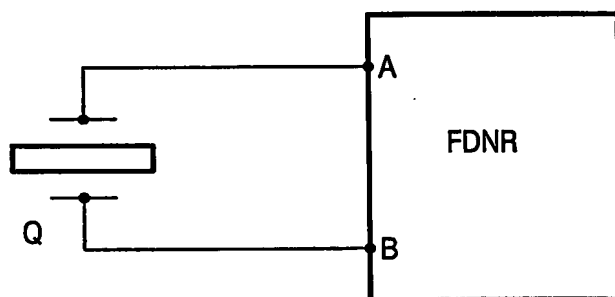
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(54) Title: **ACCURATE UNTRIMMED CRYSTAL OSCILLATOR**



(57) Abstract: The present invention relates to a crystal oscillator for generating an oscillator signal having a predetermined frequency, wherein a frequency-dependent negative resistance circuit (FDNR) having a negative resistance inversely proportional to frequency squared is connected to an oscillator crystal (Q). Thereby, the voltage across the crystal (Q) approaches the time integral of a current supplied by an amplitude control means (10) and the input voltage of the amplitude control means (10) approaches the time integral of the current flowing through the crystal (Q). Due to this integration behavior of

the frequency-dependent negative resistance circuit (FDNR), no accurate capacitors or other accurate reactive components are necessary. High accuracy can thus be achieved without trimming. As an example, the frequency-dependent negative resistance circuit may comprise a first integrator circuit having an output connected to the oscillator crystal (Q), a second integrator circuit having an input connected to the crystal (Q), and an amplifier circuit used for controlling the amplitude.

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